

**TIIAP FY 1999**  
**Project Narrative**

Community Preservation & Development Corp

Grant # 11-60-99022  
Community Networking  
Washington, D.C.

## **PROJECT DEFINITION**

### **EDGE NET**

EdgeNet will place a networked computer in each apartment in this community and provide residents with broad bandwidth telecommunication capability. Residents will use EdgeNet to:

- Learn word processing, spreadsheet, financial management, and internet browser software applications that will enhance educational and employment opportunities;
- Communicate with one another via email and community forums or chat rooms customized for the community and hosted on an intranet;
- Have high speed access to the Internet and a variety of online resources; and
- Register for CPDC coordinated services, assessments, classes, and programs.

EdgeNet will create an electronic village that will mirror the complete physical and social redevelopment of the community that started over three years ago.

EdgeNet's network architecture is designed on a server-based computing model that utilizes Citrix MetaFrame and Microsoft's Window Terminal Server running on NT servers. Residents will have access to the residential network through a thin client machine installed in their apartments with a standard Windows/NT interface. This interface will serve out applications that include a word-processor (MS Word97), a spreadsheet program (MS Excel97), an Internet browser (MS Explorer4.0) and a personal finance application (MS Money98). In addition, each user will have an individual e-mail account hosted on Microsoft's Exchange Server and an allotted amount of server space for file storage. All services will be provided on a fully enabled 10Mbps Network over Category-5 copper and fiber optic cable. The network will provide Internet Service to all residents via a T-1 Frame Relay connection to its Internet Service Provider. This connection gives the network and the services adequate bandwidth to meet the changing technological needs of a diverse computing community. One high rise and six garden apartments are already wired in anticipation of EdgeNet. The rest of the community still needs the basic infrastructure.

CPDC requests \$650,000 from TIAP over a three-year period. These funds will be used for additional wiring infrastructure, for the research CPDC and its partners will perform on EdgeNet, for web development, for salaries of project-related staff, and for the thin client units installed in each apartment.

### **BACKGROUND: PROBLEMS AND APPROACHES**

Edgewood Terrace is a sixteen-acre, 884-unit site that has three high rises and nine garden apartments (*appendix 1*). Located in Ward 5 of Northeast Washington, DC, Edgewood suffered from the neglect and poverty that characterized public housing projects in the 1980s. In 1991, CPDC joined with the residents, conducted a needs-assessment with Catholic University of America's School of Social Work, compiled and analyzed demographic data, and sought input from the community to develop a comprehensive revitalization plan. Today, Edgewood Terrace Phase 1 (EWT I: 292 apartments), a \$17,000,000 rehabilitation of the first of three high-rises and six of the nine garden apartments, is complete. Construction on the three additional garden apartments (42 units that are a part of EWT III) is currently underway, and the renovation of a second high rise, a senior assisted- and independent-living complex (EWT III), is scheduled to begin later this year. The third of the three high rises (EWT II) has been maintained and is not in need of repair. Nearly all of the EWT I apartments have been rented to a low- and moderate-income population that includes all of the former Section 8 residents as well as individuals and families transitioning from homelessness to permanent housing.

When CPDC purchased and began renovating 601 Edgewood Street (EWT I high rise) and six neighboring garden apartments in 1995, the building was less than 40% occupied. The remaining residents all had Section 8 vouchers tied to this complex and were unable to move. The building and the community were seriously deteriorated—pipes leaked, apartments were abandoned and deteriorated, the roof leaked,

there were large numbers of rats, the garage had collapsed, an open-air drug market flourished in the common area, and the crime rate was astronomical. Edgewood Terrace was a 'problem child' of one of the most troubled wards in the District of Columbia, Ward 5. Ward 5 has the second highest unemployment rate in DC, 10.7%. It also has low educational attainment and high welfare dependency.

Today, there are over 1200 residents of Edgewood Terrace, more than 225 of them are children. Less than a year ago, the average annual household income for Edgewood Terrace residents was \$10,879. Since that time, the average annual income of the Edgewood Terrace community has risen to \$17,024 as moderate-income individuals and families have rented some of the renovated apartments and as salaries rise as a result of employment training programs. This annual income (usually a more liberal income measurement than median income) is still far below the Ward 5 (\$26,874) and Washington, DC (\$30,727) median incomes.

Prior to CPDC's involvement in this community, the residents of Edgewood Terrace felt powerless to change or improve their community and detached from needed services that would help them improve their lives. Social services were fragmented and dispersed. Residents expressed frustration at not being able to identify any tools or vehicles at their disposal that could help them get out of the desperate poverty that had seized their community. CPDC realized that in order to 'fix' this community (and not just 'fix' the buildings) residents needed access to social services that could put them on the road to self-sufficiency. In order to provide a vehicle for this social renovation, CPDC developed a model to bring technology into every apartment in this community so that residents could use it as a base to launch individual and community revitalization. In order to lay the groundwork for this innovative approach to community development, CPDC developed technology-centered programs coordinated in on-site learning centers for youth, adults, and seniors at Edgewood.

Phase 1 of the renovation provided a valuable community resource, over 40,000 square feet of non-residential space that CPDC renovated to host on-site social services called The Connection @Edgewood Terrace (The Connection). The Connection is a hub for CPDC's partners, other community service organizations, and a resource for residents and members of the community (*appendix 2*). The Connection has transformed the role of Edgewood Terrace in the broader community by making it a center of revitalization rather than a center of crime, violence, and despair. The Connection contains CPDC staff offices and 'hoteling' space that community partners use to establish satellite offices in the community.

To raise incomes, lower unemployment, and increase education levels of Edgewood residents, CPDC raised cash and in-kind funding to provide computer hardware and a wiring infrastructure to build and connect four computer learning centers that serve as the focus for education and employment training programs (*appendix 3*). These learning centers are located in the 40,000 square feet of renovated non-residential space and are called The Gateway @Edgewood Terrace (The Gateway). These centers host formal workforce development programs, youth development initiatives, and a range of computer training classes for youth, adults, and seniors. CPDC created the Gateway to prepare residents for jobs utilizing computer skills, to enhance youth and adult learning, and to build self-esteem and self-reliance through the use of current technology. The Gateway is the first step, or entryway, toward bringing technology into every residence in this complex. In addition to raising the funds to create and connect The Gateway learning centers, CPDC developed the resources to wire the 334 units of Phase I to facilitate the eventual creation of EdgeNet, an electronic village that will reflect the physical village that is being redeveloped.

To truly impact this community, this technology needs to be in residents' homes. The Gateway learning centers have initiated a process of transformation by bringing the potential offered by technology to this community. However, without computers in every home, this population cannot integrate technology into their daily lives.

### **OUTCOMES**

Network technology has dramatically altered the social, political, economic, and cultural landscape of American society in the last two decades. Corporations, universities, government offices, non-profits, and associations have been able to redefine the nature and scope of communication through the application of this technology. Networking has allowed new entrepreneurs to emerge and businesses to grow at an unheard of rate, improved communication, changed the nature of education, and brought valuable information into millions of homes and workplaces. Advanced telecommunication technology has created new methods for building community by redefining communication, the fundamental building block of community. EdgeNet will bring similar benefits into every residence in this complex. EdgeNet will improve communication by providing immediate in-home access via email to all residents and by creating forums where residents can share interests and information. The network will allow resident associations to circulate information quickly and thoroughly. EdgeNet will also provide access to information and social services chosen by this community. It will provide a web-based resource that residents can use to communicate and improve their lives and to improve the delivery of needed social services.

CPDC has made impressive strides in the last two years in training residents and members of the community for the more than 20,000 open positions in the Washington area for jobs requiring basic skills in administration, customer service, and computing. However, residents of Edgewood Terrace still do not have the power afforded by in-home high-speed, broadband telecommunication capability. EdgeNet will provide them with that access and word processing, spreadsheet, financial management, and Internet software applications. CPDC expects the following outcomes from the installation of EdgeNet:

- 100% of 884 units will have access to EdgeNet through thin client computers;
- 80% of residents will have the thin client box installed and attend required training sessions;
- 90% of 'on-line' residents will use the unit at least five times per month;
- 75% of on-line residents will train in at least one software application;
- At least 50 on-line residents will actively participate in the content and design of EdgeNet;

and the following results from its use:

- Resident employability will improve;
- Youths will do better in school as a result of having a computer in their home;
- The process of community building will expand dramatically;
- Residents will have quick and easy access to web-based information;
- The delivery of social services will improve;
- Existing resident associations will use EdgeNet to disseminate information on meetings, community events, and issues affecting the community;
- Residents will generate at least ten forums to share information and interests; and
- Members of the Computer Users Club will continue to learn about the design, installation, maintenance, and use of this technology and mentor other residents.

EdgeNet will be designed so that residents and CPDC can track this information and report on it on a regular basis.

More importantly, we expect that having the power of this technology in their homes and at their fingertips will *fundamentally* change the way that Edgewood residents think, imagine, learn, communicate, and create. EdgeNet can bring the residents and this community to the forefront of innovative uses of network technology and provide them with the opportunity to integrate and shape this technology. This is, in fact, one of the most exciting and compelling components of EdgeNet. We do not know exactly what to expect as 'big picture' outcomes, and the residents will certainly tailor their use of this technology in ways that we never anticipated. As a result, one additional outcome will be that CPDC can share lessons learned about a community's own vision and use of this technology.

## **REDUCING DISPARITY**

Increasingly, many inner-city, poor, and minority populations do not have the same access to technology that their white and middle or upper income counterparts enjoy, as the study "*Falling Through the Net II: New Data on the Digital Divide*" shows. The disparity in access to technology aggravates already

biased employment and educational “playing fields”. “Falling Through the Net II” shows computer ownership and on-line access for central city African-Americans (17.1% and 5.8% respectively) lagging significantly behind the national averages (36.6% and 18.6% respectively). A random survey (N=150) conducted at Edgewood Terrace, which is predominantly African American and located in a central city, shows a similar pattern of computer and on-line penetration with 10% owning a PC and 5% having on-line access. EdgeNet will help to level employment and educational playing fields by providing residents with in-home advanced telecommunication capability and access to current, marketable applications that will help them along the road to economic self-sufficiency.

Many scholars and researchers have confronted issues of access to technology in twentieth-century America. “*Falling Through the Net II*” points to continuing patterns of disparity based largely on race, income, and geographic categories in computer ownership and advanced telecommunication capability. “*Technology Versus African-Americans*” by Anthony Walton (*Atlantic Monthly*, January 1999) discusses the implications of an urban black population alienated from the technology that increasingly drives American education, employment, politics, and society. Anthony Walton argues that while African-Americans can purchase new technology they are:

otherwise existing on the margins of the ethos that defines the nation, underrepresented as designers, innovators, and implementers of our systems and machines. As a group, they have suffered from something that can loosely be called technological illiteracy... It is important that we understand and come to terms with this *now*; there are technological developments in the making that could permanently affect the destiny of black Americans, as Americans and as global citizens.

Walton goes on to argue that this alienation from active participation in the development of technology results both from broader American patterns that have kept them at the margins, or on the edge, of American society and from “black folkways... those unspoken, largely unconscious patterns of thought and belief about what is possible.” These ‘folkways’ are common to patterns in marginalized and underserved populations. EdgeNet will change both the access that keeps inner-city African-Americans on the edge of American society and will chip away at the folkways that reinforce this marginalization by providing them the training that will open up new possibilities through active participation in the design, implementation, and maintenance of this network. EdgeNet will give them ownership of use and content of this resource.

EdgeNet, like other CPDC programs, is founded on the principle that access, support, and training, *not ability*, are the primary distinguishing factors between the ‘haves’ and the ‘have-nots’ of American society. EdgeNet will directly address disparities in access to current, cutting-edge technology by providing each resident of Edgewood Terrace with in-home computing capability and high-speed access to a community intranet, the Internet, and a complete range of software applications. It will also provide additional resources determined by the resident Computer Users Club, which was formed to advise CPDC on the design and implementation of EdgeNet, and CPDC staff through a community web site and intranet. These resources will include:

- a community newsletter, chat rooms and bulletin boards—forums that residents can use to expand their ability to communicate, share ideas, and learn from and teach one another;
- web-based registration for CPDC coordinated services, assessments, programs, and classes that include psycho-social assessments, computer training, workforce development, vocational evaluations, and referrals to public and non-profit social services;
- access to web-based video curricula for software applications; and
- access to governmental and non-governmental community services.

EdgeNet will build and sustain a ‘virtual’ community that will complement the traditional community building efforts, physical rehabilitation, and training programs already put in place by residents, CPDC, and the community partners.

## **SIGNIFICANCE, INNOVATION, AND REPLICABILITY**

CPDC has been recognized by local and federal public agencies and other non-profits as a leader in developing programs that use technology to improve the lives and livelihoods of the communities it

serves. EdgeNet will join other CPDC-initiated activities as a national model for low- and moderate-income community development. The organization has partnered and worked with non-profit organizations, universities, corporations, and federal agencies examining these issues. CPDC is unaware of any other initiative that is attempting to provide this level of telecommunication service and server-based technology and thin client computing power to a unified public housing community.

The thin client configuration is appropriate for this setting. Server-based computing allows the ease of central administration and maintenance required for any rental property. System administrators should only have to enter rental apartments on rare occasions. Thin client computers also solve a dilemma inherent in placing personal computers with a relatively high street value into rental properties: they are virtually useless unless connected to an appropriate central server. Also, thin client computers are a cost-effective (both in initial and overall costs) alternative to personal computers, a central reason for their increased use in corporate and university settings. At the same time, they allow for peripherals such as printers or floppy drives to be easily installed.

As a low- and moderate-income rental property with technologically-oriented components already in place, Edgewood Terrace provides an exciting opportunity to implement thin client technology, test its applicability, and provide a new model of network technology for other, similar environments. The installation of this technology will bring universal service as outlined by the Telecommunications Act of 1996 immediately into the homes of the community. This in-home service, with complementary community-based access centers open to the broader community, will provide a unique opportunity to study the comparative advantages and disadvantages of the two types of access and service. Its significance as a model for the innovative use of network telecommunication technology is only one part of the overall significance of this endeavor.

As much significance lies in the extension of the power of this technology to the community and its ability to redefine the social fabric, nature of communication, and delivery of social services. The residents, CPDC, and their partners are taking what was only three years ago a dramatic example of everything that could and did go wrong in American inner-cities and is transforming it into a living example of the potential of technology to rebuild communities. This process of rebuilding occurs on a number of levels that include improving the employability of people in the community, reinvigorating residents' associations and organizations, assisting people in developing small businesses, and exposing youths and adults to the potential applications of technology in their daily lives. The demand for learning about technology through CPDC-coordinated programs has already outgrown the capacity of the four Gateway computer learning centers in only six months. This community is hungry for technology and for the ways that it can help them improve their lives and their community.

EdgeNet will provide the opportunity to study this thin client configuration for application in similar environments. The community intranet which will help coordinate delivery of services and build a customized knowledge base tailored to the community's needs is easily replicable as a national model for other community development efforts and organizations. A thorough examination of thin client computing may provide an alternative model to PC-based networks that is less expensive to design, install, administer, and maintain. By using both new wiring arrays run in buildings that require substantial renovation and existing telephone wires with hubs that can distinguish between voice and data transmissions, CPDC will be able to assess and report on the strengths and weaknesses (as well as the cost) of each configuration.

## **PROJECT FEASIBILITY**

Every aspect of the implementation of this community development initiative has been done placing critical attention on its feasibility. The technology we have chosen is appropriate for this community because it extends the precise kind of telecommunication capability and access to information that residents need without the administrative nightmare that a PC-based network would undoubtedly create.

CPDC has identified and evaluated a number of different hardware, software, and network configurations and has decided on this particular configuration for the reasons listed above.

CPDC has the organizational capacity, matching funds, existing initial infrastructure, and community involvement to ensure that EdgeNet happens with acquisition of the resources we have requested. Over three years of planning, design and negotiation have already gone into EdgeNet, and over \$2.6 million in cash and in kind contributions have already been assembled (*appendix 4*). CPDC has developed intensive relationships with the community, other community stakeholders, public agencies, and vendors of the technologies that make up this system.

Two of the three high rises and all nine garden apartments that make up Edgewood Terrace are, or were, seriously dilapidated and in desperate need of extensive renovation. The extent of the deterioration in Edgewood Terrace-Phase 1 required renovation that included rewiring and dry-walling all of the halls and units. This provided CPDC with the opportunity to wire these units at a relatively low cost. During Phase 1, CPDC ran fiber-optic lines to hubs located on each floor or in each garden apartment from a centralized location. From these hubs, CPDC ran category-5 copper cable to jacks in each apartment that will be used to connect the thin client computers. Phase 2 of the comprehensive redevelopment plan will include the renovation of the second of the two seriously deteriorated high rises and the three remaining garden apartments. During the construction, which is scheduled to start at the end of the calendar year, the same type of wiring array will be run. The third high rise was well managed and cared for during the last two decades and does not need substantial renovation. To connect those residents to EdgeNet, CPDC will use relayed telephone hubs that distinguish between voice and data transmissions.

CPDC stands in a unique position to implement this initiative. Organizationally, CPDC has worked in this community for over seven years and, as a result, has a solid presence and a talented staff that is committed to this community (*appendix 5*). In addition, CPDC has staff and partners that will install the remaining infrastructure and the thin client units in each apartment and that will coordinate the training on this technology. CPDC already has a long history of bringing technology to this community and devising appropriate and successful training programs that have won it credibility in the community and in the District of Columbia as a leader in bringing technology to low-income people.

CPDC has raised over 50% of the funds needed to connect all 884 units on this site and create an electronic village for a community once rife with crime and violence. This leveraging ensures the implementation of EdgeNet and reflects the organization's commitment to developing appropriate and innovative solutions to problems in American inner cities. The maintenance and sustainability will develop as EdgeNet and the other programs that CPDC coordinates take hold and reinvigorate this community. As the technology permeates these buildings and changes the educational and employment opportunities of this community, skilled residents will be able to participate in its operation and maintenance. And, higher incomes among residents will provide the community with the opportunity to support the system.

## **COMMUNITY INVOLVEMENT: RESIDENTS AND PARTNERS**

A hallmark of the design and implementation of any CPDC initiative is the involvement of the community it impacts. This involvement includes the active participation of the residents' associations and of CPDC's partners that are stakeholders in this community (*appendix 6*). The residents, Catholic University, the Morino Institute, HUD, Microsoft, and the technology firms who will be installing and managing the network have all played instrumental roles in building EdgeNet.

For the preliminary design and planning stages, the resident Computer Users Club has advised CPDC staff on the needs and desires of the Edgewood community with regards to the implementation of EdgeNet. They have provided concrete requests for specific kinds of applications and access to information as well as overall impressions related to the kind of system and interface that would best serve their computing needs. The Computer User's Club will take a leading role in the 'roll-out' of the thin client

network by learning about the system as it is installed and by mentoring other residents in its use. They will help design and implement an appropriate training program and system of support for the end-users. This training and support will help ensure that EdgeNet gets used frequently and thoroughly. The Computer User's Club will also shadow the installation of the servers and thin clients so that they have a working command of the operational aspects of the system and can perform more complex tasks. This Club will eventually manage EdgeNet and coordinate community requests for additions or changes. In this way, the community will control the content and application of this resource.

Catholic University of America (CUA) and the Morino Institute have both recognized the opportunity and potential offered by the integration of technology in the development of this community and have been two community partners that have taken the most active role in the development of technologically-centered programs. These partnerships reflect the potential for combining innovative models of technology in low-income communities and for examining this potential through concrete research and assessment. These partnerships have made Edgewood Terrace a vital testing ground for the use of technology in the process of community development.

Catholic University's partnership brings two exciting programs that greatly expand the value of technology for this community. With an eye toward the eventual creation of EdgeNet, CUA and CPDC have developed the '@Home.On.Campus' (@Home) program which brings a satellite campus of CUA to Edgewood Terrace. @Home offers professional certification programs and college credit courses on site. The professional certification programs include Records Information Management and Network Administration and will incorporate Microsoft certification programs. With EdgeNet, @Home will be able to offer web-based learning programs and tutorials for classroom courses to all of the residents of Edgewood Terrace through a distance learning program already in the planning stages. @Home will create skilled resident network administrators able to manage the maintenance of EdgeNet.

CPDC is also working with CUA's Department of Biomedical Engineering, a nationally recognized leader in the development of cutting edge telehealth and telerehabilitation, to explore the medical opportunities presented by buildings wired like Edgewood Terrace. CUA's Department of Biomedical Engineering is considering using Edgewood Terrace as the primary research site to examine the applications of this technology in American inner cities. Telehealth models were originally developed to serve rural communities that were geographically isolated from traditional medical facilities. Researchers have recently noted similar patterns in reception of health care among many inner-city minorities prompting the extension of this model into these communities to test its impact. Edgewood Terrace would allow a comprehensive study of telehealth in an urban community.

The Morino Institute chose Edgewood Terrace as one of four sites of a pilot project designed to assess the use of Internet-enabled learning as a core component in a youth development program designed to foster the cognitive, social, and leadership potential of American youth. As an active member of the Youth Development Collaborative along with the Calvary Bilingual Multicultural Center, Friendship House, and Perry School, CPDC is taking a leading role in assessing the value of technology for the youth in this community. These five organizations are working collaboratively to establish Internet-enabled Networked Learning Centers as a model for community-based learning.

In addition to these community partners that have taken a leading role in implementing and assessing this community's use of technology, public agencies, corporations, and vendors have also made substantial contributions. The U.S. Department of Housing and Urban Development has granted funds to help bring technology into this community as a demonstration of the potential of technology as a basis for community development. Microsoft Corporation has donated software, hardware, and technical assistance to the development of the Gateway learning centers and for EdgeNet. For EdgeNet, Microsoft is contributing the software to run the servers and to provide each resident with the applications listed above. All of the vendors CPDC has chosen for EdgeNet, Data Transit, Netier, Data General, and Citrix, are providing substantial in-kind donations to ensure that this innovative network is up and running.



CPDC anticipates that EdgeNet will be a valuable resource to many other partners and organizations that we have not yet identified and a test bed for other applications of technology in community building.

## ***EVALUATION, DOCUMENTATION AND DISSEMINATION***

Each component of CPDC's community building initiative, including the creation of EdgeNet, has been developed so that respective impacts can be isolated and evaluated. Integrated into the design of EdgeNet is the capability to collect data in a form that is easy to export in order to study how residents are using the technology, what aspects of the technology they use the most, and how they would change the technology to best suit their needs. The collection and use of this data will be done only if residents voluntarily agree to it and the data can be scrubbed thoroughly enough to guarantee their privacy. Formal evaluation of EdgeNet will occur on three levels. First, the end-users, the residents of Edgewood Terrace, will be asked to provide constant feedback on the operation and content of the community Intranet. This feedback, gathered largely through surveys, interviews, and 'help-desk' responses, will help CPDC to make appropriate and effective changes to the network.

The second level of evaluation will occur internally. Tim Neill will coordinate the research on EdgeNet. Mr. Neill holds graduate degrees in political science and anthropology and will oversee the collection and analysis of both quantitative and qualitative data. He has previously co-managed a research study of a computer-driven telephone-assisted care network in Charlottesville, Virginia that presented similar methodological issues and research design concerns including the collection and management of computer-generated data. Mr. Neill will produce an intensive anthropological study of the impact of EdgeNet and of technology on this community's understanding of itself.

The third level of evaluation will occur externally in conjunction with researchers from the Communication, Culture, and Technology (CCT) Program at Georgetown University, the Department of Biomedical Engineering at Catholic University, and from members of the Youth Development Collaborative. Georgetown's CCT Program will lead the external review of EdgeNet and conduct a formal analysis of resident use and participation. The implementation of this community network and the active involvement of these community partners allows research questions to be asked that assess the use of technology for this community and others like it on topics ranging from youth development to senior health care.

The broadest evaluation questions will be: How will the implementation of this technology change the lives of residents of Edgewood Terrace?; How will EdgeNet change the way residents think, learn, communicate, teach, play, imagine, and create?; and How will it transform the way residents see themselves and their community in the context of an increasingly technological America? Because the scope of these questions present theoretical issues and methodological concerns, the research teams will attempt to answer the larger issues of impact through the following related research questions:

- How many end-users will go from computer illiteracy to proficiency?
- How many residents will access and use this system and its applications and how often?
- How will they use EdgeNet? To communicate with each other through email and the various forums or to access software applications that help them at home or at school?
- How many end-users will participate in making substantive contributions to the design and content of the community pages?

Pre-implementation interviews to collect data that concretely deal with computer literacy will be conducted on using technology in the home and workplace, senses of community and alienation, and quality of life. They will be followed by bi-annual surveys and interviews to collect a body of qualitative data that will complement quantitative data generated by the system. The servers are designed to track basic usage data and to register available demographic information of the end-users. Data will be collected and imported into a statistical software package to permit ease of analysis. The research team will be able to analyze data that connects socioeconomic indicators to patterns of usage.

CPDC will document and disseminate all of its research and findings and encourage other researchers to do the same. CPDC will post regular updates on TIAP's web site and speak at relevant conferences to share successes, setbacks, and lessons learned to other community building organizations.